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CCS B 33



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 14489.2-2008

Replacing GB/T 14489.2-1993

**Inspection of grain and oils -- Determination of crude protein in
oilseeds**

(English Translation)

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Foreword

This standard is GB/T 14489.2-1993 "oil crude protein assay" amendments.

This standard and GB/T 14489.2-1993 main technical differences are as follows.

- Modify the normative references;
- To increase and modify the terms and definitions;
- Revised reagents and equipment instructions;
- Revised sample preparation;
- Increasing the semi-micro method and instrument method;
- Increased inspection distillation step;
- Revised calculation results.

From the date of implementation of this standard instead of GB/T 14489.2-1993.

The standard proposed by the National Food Authority.

This standard by the National Standardization Technical Committee OILS.

This standard was drafted. State Grain Reserve Wuxi Scientific Research and Design Institute, East China Sea Oil Industries (Zhangjiagang) Co., Ltd.

1 Scope

This standard specifies the terms and definitions of crude oil plant protein assay, principle, reagents, apparatus, sample preparation, procedures, and results Calculations.

This standard applies to the determination of crude oil plant protein.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

Preparation of GB/T 601 chemical reagent standard titration solution GB 5491 grain and oilseeds testing for sampling, and sample method

3 Terms and Definitions

The following terms and definitions apply to this standard.

Under the conditions specified in this standard to determine the content of vegetable oil feed nitrogen conversion to give the crude protein content.

Principle 4

In the presence of a catalyst, sulfuric acid digestion of organic matter in the sample, so that nitrogen was converted into ammonium sulfate. Adding alkali and distillation of ammonia slip Out with boric acid to absorb ammonia, nitrogen content calculated using standard acid titration, multiplied by the appropriate conversion factor to calculate the protein content of crude protein.

5 Reagents

All reagents should be nitrogen-free compounds, which were of analytical grade purity, the water used should be distilled water.

5.1

sulfate. 18mol/L.

5.2

mixed catalyst. 0.4g copper sulfate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$), 6g potassium or sodium sulfate, milled mix.

5.3

Sodium hydroxide solution. Ba (NaOH) = 400g/L, 400g of sodium hydroxide dissolved in water and dilute to 1000mL.

5.4

boric acid solution. Ba (H_3BO_3) = 20g/L, 20g of boric acid dissolved in water and dilute to 1000mL.

Mixed indicator 5.5. 1 parts by 1g/L methyl red in ethanol (95%) and 5 parts of a solution of 1g/L of bromocresol green in ethanol (95%) was uniformly mixed.

5.6

hydrochloric acid standard solution. Ba (HCl) = 0.1mol/L, hydrochloric acid standard solution preparation and calibration according to GB/T 601 executed.

5.7

sucrose.

5.8

Ammonium sulfate. dry.

5.9

boric acid absorption solution. 10g/L boric acid solution 1000mL, was added 1g/L of bromocresol green in ethanol (95%) solution of 10mL, 1g/L methyl Red ethanol solution 7mL, 400g/L sodium hydroxide solution 0.5mL, mixing, cool place, storage period of one month (with automatic program).

5.10

Methyl red indicator. 0.1g methyl red dissolved in 100mL of ethanol (95%).

6 Instruments

Commonly used laboratory equipment and the following special equipment.